

# The State of ICT Implementation and Training at the University of Khartoum Library System (UKLIS)

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## Abstract

*The continuous developments in Information and Communication Technology (ICT) have had a far reaching impact on library and information institutions and services worldwide. Academic libraries, particularly in the underdeveloped world are lagging behind for a number of reasons; the important one being the lack of necessary skills to deal with ICT by academic library staff. This paper investigates the current situation of ICT at the University of Khartoum Library System (UKLIS), and identifies the staff training programmes carried out there in order to prepare the staff and equip them with the necessary skills to cope with advances in ICT. The methods employed for data collection include interviews and document analysis. The findings reveal that although the ICT infrastructure at the University of Khartoum, the parent institution, is available, yet the ICT situation at the UKLIS is deplorable, and that the training programmes available are inadequate for this purpose. The paper finally comes up with a number of recommendations and suggestions for remedying the situation and bridging the gaps identified in the ICT situation at the UKLIS. An important recommendation is the setting up of an ICT plan, and a subsequent ICT training strategy for the UKLIS staff.*

## Introduction

The current rapid developments in the field of information and communication technology (ICT) have changed significantly the nature of work in academic libraries and other types of libraries as well. These rapid changes have brought about new types of libraries and services. New concepts such as the hybrid library and the digital library have emerged. The changes in library work have occurred all over the world, and the underdeveloped countries are no exception to this. Nevertheless academic libraries in the underdeveloped countries have been lagging behind the fast changes brought about by advances in ICT. There are a number of reasons for this situation. An important reason is the poor performance of library and information professionals in these countries. This

poor performance may be attributed to a number of factors, an important one of which is the lack of appropriate in-service training and continuous educational programmes for the information professionals and library staff in academic libraries. This paper highlights the current ICT situation at the University of Khartoum Library System (UKLIS), with a special reference to the ICT training opportunities available for the Library staff.

## Objectives

This study aims at fulfilling the following objectives:

- i. To investigate the current situation of ICT implementation at the University of Khartoum Library System;
- ii. To find out the training programmes available for the library staff in ICT;
- iii. To come up with appropriate recommendations in light of the study findings.

## Methodology

This study adopts the case study approach. Techniques for data collection employed are the interview and document examination and analysis. Three unstructured interviews were conducted as follows:

- i. An interview with the Deputy University Librarian for the Digital Library with a view to eliciting information about the current status, problems and prospects of provision of electronic and digital information resources and services to UKLIS user community.
- ii. An interview with the director of the ICT Centre of the University of Khartoum with a view to eliciting information about the current status of ICT at the University at large and the ICT Centre's plan for incorporating UKLIS into the campus network.

- iii. An interview with a member of the Library Training Committee (LTC) with a view to eliciting information about the current status of the training programmes at UKLIS.

These interviews were supported by examination and analysis of documents and reports of the UKLIS.

#### Skills and Staffing Requirements Necessary to Deal with ICT

Chowdhury and Chowdhury (2003) assert that changes in old traditional library skills in addition to the acquisition of other new relevant skills are necessary for library staff in order to be able to deal with the hybrid library. They specify a number of major skills as necessary for running the digital library, in addition to the overall understanding of the computer and internet, specifically knowledge of webpage design techniques. These major skills are:

- Digitization and document management skills
- Basic networking skills.
- Skills that enable information professionals to design, and evaluate digital libraries systems and software.

Choi, young and Rassmussen (2006) carried out a survey with a view to specifying the skills and knowledge needed by academic librarians so as to be able to run digital libraries. They came up with the conclusion that library professionals need skills on two levels; the first level is related to technology which includes digital library architecture and software, web marking languages, database development and management system, and web design skills. Whereas the second level according to Choi and Rassmussen is library-related which includes aspects such as user needs, digital archiving and preservation, cataloguing, indexing, and collection development. They also stressed other requirements such as communication and interpersonal skills, project management and leadership skills, grants and proposal writing skills, and teaching and group presentation skills.

Malkawi, on the other hand, outlines three types of staff needed for the management of digital libraries, namely:

1. Curational staff to prepare and process materials to be digitized,
2. Core staff who carry out the digitization process and other related processes,
3. Educational staff whose main responsibility is to cater for user information needs.

Any modern library and information professional must be knowledgeable in library automation, networking, internet surfing, and database management software (Aina, 2004). Therefore, according to Foo et al (2002), library and information specialists should complement their professional skills by hardware and

software skills so as to be capable of working in an ICT intensive environment. ICTs are continuously updated and new forms are introduced. Digital formats such as e-journals and e-books have replaced traditional information resources. (Ashcroft and Watts 2004). Thus, there is a need for regular training for information professionals. Continuous Professional Training (CPD) is a must for information professionals in academic libraries so as to be able to maintain up-to-date levels of expertise for coping with the evolving ICTs.

#### ICT in Sudan

The Sudan country report on ICT prepared by Hamdy (2007) reveals that the country has an established ICT policy. The Sudanese national ICT strategy was formulated in the year 1999. This strategy focuses on five major areas, namely; technology infrastructure, human resource development, software industry development, content (primarily in Arabic), and geo-information. The national policy encourages the use of ICT in developing local policies to ensure the complete integration of ICT in education and training on all levels, including the development of school curricula, teacher training, and managing and organising educational institutions. The report highlights the fact that human resource development is a top priority for the ICT policy. Nevertheless, the report points out that lack of skilled trained staff who are well conversant with ICT tools is a major stumbling block for ICT in Sudan, where the few skilled manpower prefer to join the private sector rather than work for governmental institutions.

#### Staff Structure at the University of Khartoum Library System (UKLIS)

The University of Khartoum Library System (UKLIS) consists of the Main Central Library and six branch libraries. Three of these branches are situated on the main campus, whereas the other three branches are scattered throughout the city ranging from 2 to 20 kilometres away from the central campus. The Library, with a collection of more than 500,000 titles, serves a total of more than 37,000 students and staff members, out of this, about 30,000 students are undergraduate students registered for more than 300 academic programmes, in addition to an estimated 10,000 users from other institutions of higher education. The post of the University Librarian is equivalent to a full professor. He is directly responsible to the Vice Chancellor. The University Librarian is the convenor of the Library Committee which is chaired by the Deputy Vice Chancellor. There are two Deputy Librarians; one of them is the Deputy Librarian for the Digital Library. There is also a Library Registrar, in addition to a number of seven Branch and Faculty Librarians and four central Heads of Section within the Main Library, namely the Acquisitions Section, the Cataloguing Section, the Circulation Section, and the Periodicals Section. The professional and para-

professional staff structure at the UKLIS consists of Assistant Librarians and Library Assistants as professionals, and Library Attendants as para-

professionals. There are also the newly introduced posts of Technical Assistants. Refer to Table 1 below for more details on the UKLIS staff structure.

**Table 1: UKLIS Staff Structure**

Post	No.	Qualifications
Assistant Librarians	14	BA Lib. + Postgraduate Dip Lib./MA Lib
Library Assistants	10	BA lib.
Technical Assistants	4	Diploma in IT or Computer Sc.
Library attendants	82	School Leaving Certificate
Clerical Assistants	9	School Leaving Certificate

The posts of the University Librarian and his two deputies are all occupied by non-information professionals; they are filled with members of the University academic staff in the rank of associate professor for the post of Librarian and assistant professor for the two other posts. The appointment is carried out on a rotational basis, distributed among the different University faculties and colleges.

### **ICT at the UKLIS**

Major ICT issues at the University of Khartoum are the responsibility of the University ICT Centre. This Centre administers the University information network. The main campus is connected by a fibre optic backbone whereas the other University remote campuses are connected to the main campus via a virtual private network (VPN). Implementation of ICT at the UKLIS is at a preliminary stage. There is no clear ICT policy for the Library and there have been some disagreements between the Library management and the University ICT Centre over the issue of ICT at the UKLIS; there were different views as to the software to be adopted for the UKLIS automated catalogue; the UKLIS management and staff preferred to use the CDS/ISIS package and actually employed it for the Library's Electronic Thesis and Dissertations database. The ICT Centre, on the other hand, insisted on using PhpMyLibrary, the free open source library management system. The debate ended in favour of using PhpMyLibrary.

The Library management deals with ICT at the UKLIS on a number of fronts, namely:

- Retrospective conversion of the manual catalogue,
- Digitization of rare collections and the thesis and dissertations collection, and
- Provision and access to digital and electronic information sources.

### **Retrospective Conversion of the Library Catalogue**

This project is still underway. It was started by utilising the UNESCO's Winisis software. The purpose is to create a bibliographic database for all the library

holdings, with an Open Public Access Catalogue (OPAC). However, the conversion process of the old manual card catalogue is proceeding very slowly. The University ICT Centre decided to migrate to PhpMyLibrary. An advantage of using PhpMyLibrary in UKLIS is that it has the facility to convert CDS/ISIS records which constitute the Library's Electronic Thesis and Dissertations (ETDs) database. However, PhpMyLibrary is known to be suitable for libraries with smaller collections than that of the UKLIS, which houses more than 500,000 titles.

The issue of retrospective conversion of the Library catalogue has been delaying the implementation of the automated catalogue for many years. Carpenter (1991) noted that there were three different classification schemes in operation throughout the UKLIS, namely the Bliss, the Colon, and the Dewey classification schemes, and that these three different schemes had been a deterrent to the development of more comprehensive centralized services and processes, particularly the union catalogue of the Library holdings. She recommended standardization of the classification scheme used and the adoption of the DDC throughout the UKLIS. The retrospective reclassification of the whole UKLIS collection is underway and is being carried out as a prerequisite for automating the Library's catalogue. The first phase of reclassifying the Main Library collection has been accomplished and work is in progress in the other Branch Libraries.

### **Digitization and Access to Electronic Information Sources**

Digitization in the UKLIS is limited to the Sudan Collection housed at the Sudan Library and the thesis and dissertations collection. The Sudan Library is a branch library of UKLIS which is intended to take care of materials about Sudan or written by Sudanese. It also houses all theses and dissertations carried out for Masters and PhD degrees done in Sudan or by Sudanese abroad. Digitization of the Sudan collection is selective, based on user information needs; the project started with digitization of back issues of the *Sudan Notes and Records* journal, which is considered

as a rare collection; its first issue was published in the year 1920. This project is in progress now.

Another collection which is undergoing digitization is the Thesis and Dissertations collection. An electronic database of all Masters and PhD thesis and dissertations conducted at the University of Khartoum since the year 2003 is being maintained. This is a bibliographic database with abstracts available. The full text is also available but with restricted access. There are also links to ETDs in a number of 10 American and European universities.

The UKLIS subscribes to a number of e-journals and e-books databases. There are more than 2000 refereed journals and more than 15000 e-books, some of which are downloadable. There are also a number of e-courses prepared by the University teaching staff. The collection of e-journals and e-books is totally based on free subscription services made available by a number of international initiatives, such as AGORA (Access to Global Online Research in Agriculture), HINARI (Health InterNetwork Access to Research Initiative), and OARE (Online Access to Research in the Environment).

All electronic and digital information sources and databases are accessible only through the University of Khartoum Campus network connecting the University scattered branch campuses in an area of about 20 kilometres. Administration of the ICT facilities and the digital information resources at the UKLIS is the responsibility of the University Deputy Librarian for the Digital Library.

There are four electronic library reading rooms with internet connectivity distributed throughout the UKLIS, namely in the Main Library, the Medical Sciences Branch Library, the Veterinary and Agricultural Sciences Branch Library, and the Education Branch

Library. Each of these rooms is equipped with a number of 25 workstations. The personnel supervising these rooms consist of a combination of Assistant Librarians and Technical Assistants with Undergraduate Diploma in IT.

### ICT Training at the UKLIS

Training of the UKLIS staff on ICT skills is coordinated by the Library Training Committee (LTC). The LTC was set up in the year 2004 with a view to setting up training programmes and coordinating of training courses for the different categories of the UKLIS staff in order to prepare them to cope with the digital era. This committee is chaired by the University Deputy Librarian and includes a representative of the University Central Training Committee in addition to four senior Assistant Librarians as members. Tables 2 and 3 below show the different training programmes coordinated by the LTC and carried out in the period from 2004-2008.

The feedback by the UKLIS staff on these training courses was negative; they were dissatisfied by the outcome of these courses. The major complaint was that the courses were too short to be useful. They also noted that they did not have basic computer and ICT skills to enable them to benefit from these courses.

In addition to these short courses, there are also formal training opportunities at the level of Postgraduate Diploma in Library Science. However, these opportunities are very few; In the last five years, a number of only four library Assistants were granted a study leave for this programme.

### Findings

- There is no clear ICT policy or training strategy at the UKLIS,

**Table 2: Training Courses for Assistant Librarians and Library Assistants**

Course Title	Duration	No. of Participants from UKLIS	Organizing Body
Databases	4 hours	12	LTC
Management of Agricultural Information Systems	one week	1	Egyptian Agricultural Library - Egypt
Management of Agricultural Information Systems	one week	1	ICARDA - Syria
Management of Agricultural Information Systems	one week	2	FAO - Khartoum
The Electronic Library	2 weeks	2	Sudan Digital Information Company
Implementation of Quality Assurance Standards in Libraries	3 days	3	Quality Assurance Centre, Khartoum
Webpage Design	2 weeks	2	The University ICT Centre

**Table 3: Training Courses for Library Attendants**

Course Title	Duration	No. of Participants from UKLIS	Organizing Body
Library Technical Processes	2 weeks	82	LTC
Data Entry	One week	2	University ICT Centre
Data Entry	One week	35	LTC
Diploma in Library Studies	3 month	2	College of Technical and Developmental Studies

- There is lack of adequate funding for the digitization project of the rare collection and the theses and dissertations collection. This is manifested in the poor equipment used; there is only one small office scanner dedicated for this purpose. It is also noted that the UKLIS training programme does not include any courses on digitization.
  - The UKLIS is lacking skilled and experienced ICT personnel. The Lack of ICT skill and technical expertise on the part of UKLIS staff has resulted in the alienation of the Library staff from the automation process which is underway; the process so far is carried out by non-UKLIS manpower on contract basis.
  - There is no collection development policy or funding for digital and electronic resources. All the digital resources available are acquired free of charge through donor organizations.
  - There is an inadequate funding for the training programmes at the UKLIS. This is evident from the fact that training courses have been redirected towards income generation for the Library; courses were organized on commercial basis for training information workers from other institutions.
  - There is little relevance of the training courses organized for the UKLIS staff to the activities of ICT implementation there; The training courses lack an important aspect which is hardware and software troubleshooting, especially the hardware and software used by the UKLIS. The training programme is also lacking important ICT skills required for running a modern library in digital environment, such as networking and surfing the internet.
  - A major chronic problem facing the UKLIS is the lack of professionalism and commitment on the part of the top Library management, as noted by Carpenter in 1991 and McDonald in 1994. This has resulted in the present consequent deplorable situation at the UKLIS.
- Recommendations**
- These are a number of recommendations and suggestions put forward in light of the findings of this investigation, with a view to remedying the situation at the UKLIS, particularly with regard to ICT implementation and training:
- A clear ICT plan for the UKLIS should be set up. This plan should be followed by the designing of an appropriate training programme that is capable of preparing the Library staff to cope with the different aspects of ICT employed by the UKLIS.
  - Appropriate funds should be allocated for subscription to necessary online resources.
  - Internet and intranet nodes should be introduced into the main Library's reading rooms to be easily accessible by library users
  - Standardization of the classification system of the UKLIS by adopting the DDC should be speeded up and properly funded by the University administration, so as to prepare the whole UKLIS union catalogue for automation.
  - More coordination and closer relationship should be established between the UKLIS and the University ICT Centre with a view to meeting the library's ICT needs, leading to the selection and implementation of a suitable Integrated Library Management System that is capable of adopting all the UKLIS administrative, technical, and information dissemination activities.
  - PhpMyLibrary, the free open source software selected by the ICT Centre for automating the UKLIS catalogue and other operations is unsuitable for the large collection of the Library. The ICT Centre should reconsider its selection of this software. Koha, another free open source software might be a better alternative, particularly with regard to its multilingual feature including Arabic; a large proportion of the UKLIS collection is in Arabic.
  - The posts of the University Librarian and his deputies should be filled with qualified, committed and dedicated library and information professionals who can contribute positively to the development of ICT in the UKLIS.
  - The Department of Library and Information Sciences at the University of Khartoum should integrate more ICT courses into its curriculum to pave the way for graduating well qualified library

and information professionals who are capable of coping with new developments in ICT.

### Conclusion

New advances in ICT have brought about great opportunities for libraries so that they can fulfil their mission of providing the community with relevant, timely and up-to-date information. Academic libraries should take advantage of these developments and adequately train their staff so they can cope with new technologies. The negative state of affairs at the UKLIS with regard to ICT implementation and training is apparently due to mismanagement. Successive library administrations since the year 1991 could not complete the retrospective reclassification of the Library's holdings to pave the way for automating the Library's union catalogue. Insufficient strength of staff with professional and ICT skills, together with lack of management experience, training and commitment have played an important role in the present deplorable condition at the UKLIS. The UKLIS is still suffering from the problems noted by Carpenter (1991) "lack of policy objectives, effective planning and management strategies". These problems are yet to be resolved. The University top administration should address the UKLIS problems more seriously so the University Library can be repositioned to its leading role in the University system as the backbone of the University teaching and research activities in this digital era.

### References

1. Aina, L. O. (2004). Coping with the challenges of library and information delivery services: The need for institutionalized professional development. Nigerian Library Association Conference proceedings, p.4.
2. Ashcroft, Linda, and Watts, Chris (2004). ICT skills for information professionals in developing countries: perspective from a study of the electronic information environment in Nigeria. Proc. of World library and information Congress 70<sup>th</sup> IFLA General Conference and council. Buenos Aires, 22-27 august 2004. Available at [http://www.ifla.org/IV/ifla70/papers/028e-Ashcroft\\_Watts.pdf](http://www.ifla.org/IV/ifla70/papers/028e-Ashcroft_Watts.pdf)
3. Carpenter, J. (1991). The Rehabilitation of the University of Khartoum Library and Information Services: A report. London : Carpenter Davis Associates
4. Choi, youngok, and Rasmussen, Edie. (2006). What Is Needed to Educate Future Digital Librarians: A Study of Current Practice and Staffing Patterns in Academic and Research Libraries. *D-Lib Magazine*, 12 (9). Online version available at: <http://www.dlib.org/dlib/september06/choi/09choi.html>
5. Chowdhury, G. G. And Chowdhury, Sudatta. (2003). *Introduction to Digital Libraries*. London: Facet publishing.
6. Foo, S., Chaudhry, A.S., Majid, S.M., & Logan, E. (2002). Academic libraries in transition: Challenges ahead. Proc. Of World Library Summit; keynote address: academic Library Seminar, national Library Board. Singapore, April 22-26. Available at: [http://www3.ntu.edu.sg/home/assfoo/publications/2002/02wls\\_fmt.pdf](http://www3.ntu.edu.sg/home/assfoo/publications/2002/02wls_fmt.pdf)
7. Hamdy, Amr. (2007). Survey of ICT and Education in Sudan. *Survey of ICT and Education in Africa*. 2(53) Country Reports. Washington, DC: infoDef / World Bank. Available at: <http://www.infodef.org/en/publications.354.html>
8. Malkawi, Mohammad. Digital electronic library in the Arab world. An online paper Available at: [http://www.unesco.org/webworld/public\\_domain/tunis97/com\\_29/com\\_29.html](http://www.unesco.org/webworld/public_domain/tunis97/com_29/com_29.html)
9. McDonald, A. C. (1994). A Strategic Assessment of the University of Khartoum Library. A report. The British Council.